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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,687	01/05/2005	Renato Caponi	23166	9769

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EXAMINER	
RICHEY, SCOTT M	
ART UNIT	**PAPER NUMBER**
2877	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/520,687	CAPONI ET AL.	
	Examiner	Art Unit	
	Scott M. Richey	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/5/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because the date appears as "17 LUG. 2003" and should instead be written in English.

Claim Objections

The claims are objected to because they include reference characters, which are not enclosed within parentheses.

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m).

Claims 1 and 10 are objected to because they contain reference characters in curly brackets, {11) and {35) respectively. The applicant may have intended --*(11)*-- and --*(35)*--. Appropriate action is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims are directed to a judicial exception; as such, pursuant to the Interim Guidelines on Patent Eligible Subject Matter (MPEP 2106), the claims must have either physical transformation and/or a useful, concrete and tangible result. The claims fail to include transformation from one physical state to another. Although, the claims appear useful and concrete, there does not appear to be a tangible result claimed.

As to Claim 1, merely determining the polarization mode dispersion would not appear to be sufficient to constitute a tangible result, since the outcome of the determining step has not been claimed as used in a disclosed practical application nor claimed as made available in such a manner that its usefulness in a disclosed practical application can be realized. As such the subject matter of the claim is not patent eligible.

As to Claim 2, merely computing the deconvolution would not appear to be sufficient to constitute a tangible result, since the outcome of the computing step has not been claimed as used in a disclosed practical application nor claimed as made available in such a manner that its usefulness in a disclosed practical application can be realized. As such the subject matter of the claims is not patent eligible.

As to Claim 3, merely determining an average would not appear to be sufficient to constitute a tangible result, since the outcome of the determining step has not been claimed as used in a disclosed practical application nor claimed as made available in

such a manner that its usefulness in a disclosed practical application can be realized. As such the subject matter of the claims is not patent eligible.

As to Claim 4 and Claim 5, merely further limiting the information content would not appear to be sufficient to constitute a tangible result, since the outcome of the determining step has not been claimed as used in a disclosed practical application nor claimed as made available in such a manner that its usefulness in a disclosed practical application can be realized. As such the subject matter of the claims is not patent eligible.

As to Claim 6, the claims are drawn to a computer program per se. A computer program per se is abstract instructions. Therefore, a computer program is not a physical thing (product) nor a process as they are not "acts" being performed. As such, these claims are not directed to one of the statutory categories of invention (See MPEP 2106.01), but are directed to nonstatutory functional descriptive material.

It is noted that computer programs embodied on a computer readable medium or other structure, which would permit the functionality of the program to be realized, would be directed to a product and be within a statutory category of invention, so long as the computer readable medium is not disclosed as non-statutory subject matter per se (signals or carrier waves).

The product as claimed is "able to be directly loaded," which is not located on a computer readable medium. Further, the invention as claimed lacks a functional interrelationship.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Gisin et al. (US 5,852,496) (Gisin).

As to Claims 1-7, Gisin discloses a method for measuring the polarization mode dispersion of an optical fiber applying an optical signal to a first end of the fiber and coupling a second end of the fiber to an interferometer, said method comprising the step of: generating by means of said interferometer at least one interferogram comprising at least a central peak and two side lobes having a determined information content (Fig.5); and being characterized by the steps of processing said interferogram in such a way as to measure the information content of at least one of said two side lobes (col.5, ln.53-62); and determining the polarization mode dispersion of the fiber (col.5, ln.53-62) associating to said measurement of said information content a probability density function (Fig.5, 60, 70, 80) representative of the polarization mode dispersion of the fiber in the form of differential group delay (Fig.5, Δt),

(Claim 2) further characterized in that said step of determining the polarization mode dispersion comprises the step of computing the deconvolution of said at least one side lobe with said central peak so that said deconvolution corresponds to the probability density of the differential group delay determined by the PMD of the fiber

(The peaks of Fig.5 are probability distributions used to determine PMD, col.5, ln.53-62),

(Claim 3) further characterized by the additional step of determining an average of measurements of said information content whereto said probability density is to be associated (col.7, ln.32-37),

(Claim 4) further characterized in that said information content comprises a single numeric value determined by the position of said at least one side lobe in the interferogram (Fig.5, Δt_i),

(Claim 5) further characterized in that said information content comprises a plurality of values determined by the position of said at least one side lobe in the interferogram (Fig.5c, $\Delta t_i - \Delta t_j$), and

(Claim 6) a computer product able to be directly loaded in the internal memory of an electronic measuring device and comprising portions of software code to implement the method as claimed in claim 1 when the product is run on said electronic device (Fig.4, 21 is an electronic processor for generating the interferogram, which inherently contains this implementation code in memory.).

As to Claims 7-9, Gisin discloses a system (Fig.1, 4, and 5) for measuring the polarization mode dispersion of an optical fiber, comprising an optical source able to generate an optical signal to be injected into the fiber (16); an interferometer associated to the fiber and able to generate an interferogram comprising at least a central peak and two side lobes having a determined information content (col.5, ln.48-62); characterized by a device connected to said interferometer and able to process said interferogram in

such a way as to measure the information content of at least one of said side lobes (Fig.4, 21; col.3, ln.25-27); and determine the polarization mode dispersion of the fiber associating to said measurement of said information content a probability density function representative of the polarization mode dispersion of the fiber in the form of differential group delay (Fig.5; col.3, ln.28-30),

(Claim 8) further characterized in that said device comprises a first module able to compute the deconvolution of said at least one side lobe with said central peak so that said deconvolution corresponds to the probability density of the differential group delay determined by the PMD of the fiber (Fig.5; col.5, ln.53-62),

(Claim 9) further characterized in that said device comprises a second module able to determine an average of measurements of said information content whereto said probability density is to be associated (col.7, ln.32-37).

As to Claims 10-12, Gisin discloses a device for measuring the polarization mode dispersion of an optical fiber into which optical signals have been injected, comprising an optoelectronic module able to convert the optical signals into electrical signals (Fig.4, 25); a display device able to generate an interferogram comprising at least a central peak and two side lobes having a determined information content (Fig.5); characterized by a control unit able to measure the information content of at least one of said two side lobes (Fig.4, 21); determine the polarization mode dispersion of the fiber associating to said measurement of said information content a probability density function representative of the polarization mode dispersion of the fiber in the form of differential group delay (Fig.5; col.3, ln.28-30),

(Claim 11) further characterized in that it comprises a first program module able to compute the deconvolution of said at least a side lobe with said central peak so that said deconvolution corresponds to the probability density of the differential group delay determined by the PMD of the fiber (Fig.5; col.5, ln.53-62), and

(Claim 12) further characterized in that it comprises a second program module able to determine an average of measurements of said information content whereto said probability density is to be associated (col.7, ln.32-37).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott M. Richey whose telephone number is (571) 270-1296. The examiner can normally be reached on Monday - Thursday, 8:00 - 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Patent Examiner
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